IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff EDER

Serial No.: 08/999,245

Filed: December 10, 1997

For: A method of and system for analyzing, modeling and valuing elements of a business enterprise

Group Art Unit: 3692

Examiner: Frantzy Poinvil

Brief on Appeal

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20321

Sir or Madam:

The Table of Contents is on page 2 of this paper.

Table of Contents

Real party in interest

Asset Reliance, Inc. (dba Asset Trust, Inc.)

Related appeals

An appeal for U.S. Patent Application 10/282,113 filed October 29, 2002 may be affected by or have a bearing on this appeal. An appeal for U.S. Patent Application 09/761,670 filed January 18, 2001 may be affected or have a bearing on this appeal. An appeal for U.S. Patent Application 09/761,671 filed January 18, 2001 may be affected or have a bearing on this appeal. An Appeal for U.S. Patent Application 09/940,450 filed on August 29, 2001 may be affected by or have a bearing on this appeal.

Status of Claims

Claims 44 – 59 and 65 - 81 are rejected and are the subject of this appeal. Claims 1 – 43 and 60 – 64 are cancelled without prejudice. Claim 82 is withdrawn.

Status of Amendments

An Amendment/Reply was submitted on April 1, 2007.

Summary of Claimed Subject Matter

One embodiment of a method of and system for analyzing, modeling and valuing elements of a business enterprise according to the present invention is best depicted in Figures 1 – 15 of the specification for the instant application. Figure 1 gives an overview of the major processing steps which include converting and storing data from a plurality of database management systems for use in analysis, analyzing the data as required to: optionally value growth options, identify value drivers by element of value, develop predictive models for each component of value and value the elements of value.

Independent Claim 44 - One embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 44 where a program storage device guides the conversion and storage of data aggregated from a plurality of management systems in accordance with a common schema for use in processing. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification.

Dependent claims

The limitations associated with dependent claim 45 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 46 are described in several places including line 16, page 56 through line 9, page 59 of the specification.

The limitations associated with dependent claim 47 are described in several places including table 1, page 9, and Table 16, page 31 of the specification.

The limitations associated with dependent claim 48 are described in line 1, page 26 through line 14, page 26.

The limitations associated with dependent claim 49 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 50 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification..

The limitations associated with dependent claim 51 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 52 are described in a variety of places including FIG. 10.

Independent Claim 53 - A second embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 53 where a method converts and stores data aggregated from a plurality of management systems in accordance with a common

schema for use in processing. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification.

Dependent claims

The limitations associated with dependent claim 54 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 55 are described in several places including table 1, page 9, and Table 16, page 31 of the specification.

The limitations associated with dependent claim 56 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 57 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification..

The limitations associated with dependent claim 58 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 59 are described in several places including FIG. 10.

Independent Claim 65 - A third embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 65 where a method converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in analysis and modeling. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification.

Dependent claim

The limitations associated with dependent claim 66 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

Independent Claim 67 - A fourth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 67 where a computer readable medium guides the integration of data from a plurality of management systems in accordance with a common schema for use in processing. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems

are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification.

Dependent claims

The limitations associated with dependent claim 68 are described in several places including FIG. 10.

The limitations associated with dependent claim 69 are described in several places including FIG. 10.

The limitations associated with dependent claim 70 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

Independent claim 71 - A fifth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 71 where a system converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in processing. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification.

Dependent claims

The limitations associated with dependent claim 72 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification. It is well known to those of average skill in the art that the databases for the listed systems are typically relational database systems.

The limitations associated with dependent claim 73 are described in several places including FIG. 1, reference number 25 and line 15, page 12 through line 16 page 12 of the specification.

The limitations associated with dependent claim 74 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 75 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 76 are described in several places including line 12, page 8 through line 22, page 8 of the specification.

Independent claim 77 A sixth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 77 where a method converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in processing. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification.

Dependent claims

The limitations associated with dependent claim 78 are described in several places including FIG. 1, reference number 25 and line 15, page 12 through line 16 page 12 of the specification.

The limitations associated with dependent claim 79 are described in several places including FIG. 1, reference number 5 and line 20, page 12 of the specification.

The limitations associated with dependent claim 80 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 81 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

Grounds of rejection to be reviewed on appeal

Issue 1 - Whether claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

Issue 2 - Whether claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

Issue 3 - Whether claim 65 and claim 66 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

Issue 4 - Whether claim 67, claim 68, claim 69 and claim 70 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

Issue 5 - Whether claim 71, claim 72, claim 73, claim 74, claim 75 and claim 76 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

Issue 6 - Whether claim 77, claim 78, claim 79, claim 80 and claim 81 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The Argument

Grouping of Claims

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue 1 - Whether claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The claims are patentable for several reasons. One of the primary reasons is that the Lyons document and the arguments related to the Lyons document fail to establish a prima facie case of anticipation in a number of ways for every rejected claim.

One way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. *MPEP 2131 notes that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).*

Another way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. *MPEP 2131 notes that anticipation requires that: "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

A third way in which the arguments related to the Lyons document fail to establish a prima facie case of anticipation for many if not all of the claims is there has been no disclosure of fact or technical reasoning that would support any allegations regarding inherent characteristics contained in the Lyons document. *MPEP 2112 notes that: "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)*

The Appellant respectfully submits that the rejection of independent claim 44 can be traversed in four ways. The first way is by noting that several elements of claim 44 are not explicitly described in the Lyons document. The elements not explicitly described include:

1. a common schema – the term is not mentioned,
2. storing data in files or tables – Lyons uses a central data store that stores data in accordance with a predetermined pattern relative to a given SEPT value (see page 37, Evidence Appendix, Lyons C2, L45 – 50) and does not mention storing data in files or tables, and
3. aggregating data from a plurality of database management systems – the Lyons disclosure does not mention “database management systems”.

The second way is by noting that Lyons lacks detail regarding a common schema, storing data in files or tables and aggregating enterprise related data from a plurality of database management

systems. The third way is by noting that any inherency of a common schema, storing data in files or tables and/or aggregating enterprise related data from a plurality of database management systems has not been explained. A fourth way of traversing the claim rejection is to note that the storage of data in files or tables is not enabled by Lyons. Everest (a reference provided by the Examiner) teaches that databases that store data in files or tables use a finite number of logical data structures (see pages 40 - 48, Evidence Appendix). The Lyons database does not use any of these logical data structures (see page 37, Evidence Appendix, Lyons C2, L45 – 50); therefore, Lyons does not enable the storage of data in files or tables. The Appellant notes that there are still other ways in which the §102 rejection of claim 44 can be traversed. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 44 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 45 can be traversed by noting that Lyons: is missing elements contained in parent claim 44, does not enable all the elements of parent claim 44, provides insufficient detail regarding elements of parent claim 44 and that any alleged inherency of features of parent claim 44 has not been explained. The rejection of dependent claim 45 can also be traversed by noting that Lyons: is missing elements contained in claim 45, does not enable all the elements of claim 45, provides insufficient detail regarding elements of claim 45, that any alleged inherency of features of claim 45 has not been explained and that . Elements of claim 45 not explicitly described in the Lyons document include a common data dictionary, categories of value, elements of value, and units of measure. Lyons also lacks detail regarding a common data dictionary, categories of value, elements of value, and units of measure and any inherency of a common data dictionary, categories of value, elements of value, and units of measure has not been explained. Lyons also fails to enable categories of value, elements of value and units of measure. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include the elements of value, categories of value and units of measure. Given these facts, it is clear that elements of value, categories of value and units of measure cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 45 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 46 can be traversed by noting that Lyons: is missing elements contained in parent claims 44 and 45, does not enable all the elements of parent claims 44 and 45, provides insufficient detail regarding elements of parent claims 44 and 45 and that any alleged inherency of features of parent claims 44 and 45 has not been explained. The rejection of dependent claim 46 can also be traversed by noting that Lyons: is missing elements contained in claim 46, does not enable all the elements of claim 46, provides insufficient detail regarding elements of claim 46 and that any alleged inherency of features of claim 46 has not been explained. Elements of claim 46 not explicitly or inherently described in the Lyons document include capital change. Lyons also lacks detail regarding capital change and any inherency of a capital change has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 46 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 47 can be traversed by noting that Lyons: is missing elements contained in parent claims 44 and 45, does not enable all the elements of parent claims 44 and 45, provides insufficient detail regarding elements of parent claims 44 and 45 and that any alleged inherency of features of parent claims 44 and 45 has not been explained. The rejection of dependent claim 47 can also be traversed by noting that Lyons: is missing elements contained in claim 47, does not enable all the elements of claim 47, provides insufficient detail regarding elements of claim 47 and that any alleged inherency of features of

claim 47 has not been explained. Elements of claim 47 not explicitly or inherently described in the Lyons document include brands, customers, employees, production equipment, strategic partnerships, vendor relationships. Lyons also lacks detail regarding brands, customers, employees, production equipment, strategic partnerships, vendor relationships and any inherency of brands, customers, employees, production equipment, strategic partnerships, vendor relationships has not been explained. Lyons also fails to enable brands, customers, employees, strategic partnerships and vendor relationships. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include brands, customers, employees, strategic partnerships, and vendor relationships. Given these facts, it is clear that brands, customers, employees, strategic partnerships, and vendor relationships cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 47 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 48 can be traversed by noting that Lyons: is missing elements contained in parent claims 44 and 45, does not enable all the elements of parent claims 44 and 45, provides insufficient detail regarding elements of parent claims 44 and 45 and that any alleged inherency of features of parent claims 44 and 45 has not been explained. The rejection of dependent claim 48 can also be traversed by noting that Lyons: is missing elements contained in claim 48, does not enable all the elements of claim 48, provides insufficient detail regarding elements of claim 48 and that any alleged inherency of features of claim 48 has not been explained. Elements of claim 48 not explicitly or inherently described in the Lyons document sequential points in time. Lyons also lacks detail regarding sequential points in time and any inherency of sequential points in time has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 48 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 49 can be traversed by noting that Lyons: is missing elements contained in parent claims 44, 45 and 48, does not enable all the elements of parent claims 44, 45 and 48, provides insufficient detail regarding elements of parent claims 44, 45 and 48 and that any alleged inherency of features of parent claims 44, 45 and 48 has not been explained. The rejection of dependent claim 49 can also be traversed by noting that Lyons: is missing elements contained in claim 49, does not enable all the elements of claim 49, provides insufficient detail regarding elements of claim 49 and that any alleged inherency of features of claim 49 has not been explained. Elements of claim 49 not explicitly or inherently described in the Lyons document include forecast event data and historical event data. Lyons also lacks detail regarding forecast event data and historical event data and any inherency of forecast event data and historical event data has not been explained. Lyons also fails to enable forecast event data and historical event data. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include forecast event data and historical event data. Given these facts, it is clear that forecast event data and historical event data cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 49 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 50 can be traversed by noting that Lyons: is missing elements contained in parent claims 44, 45, 48 and 49, does not enable all the elements of parent claims 44, 45, 48 and 49, provides insufficient detail regarding elements of parent claims 44, 45, 48 and 49 and that any alleged inherency of features of parent claims 44, 45, 48 and 49 has not been explained. The rejection of dependent claim 50 can also be

traversed by noting that Lyons: is missing elements contained in claim 50, does not enable all the elements of claim 50, provides insufficient detail regarding elements of claim 50 and that any alleged inherency of features of claim 50 has not been explained. Elements of claim 50 not explicitly or inherently described in the Lyons document include transaction data. Lyons also lacks detail regarding transaction data and any inherency of transaction data has not been explained. Lyons also fails to enable transaction data. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include transaction data. Given these facts, it is clear that transaction data cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 50 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 51 can be traversed by noting that Lyons: is missing elements contained in parent claim 44, does not enable all the elements of parent claim 44, provides insufficient detail regarding elements of parent claim 44 and that any alleged inherency of features of parent claim 44 has not been explained. The rejection of dependent claim 51 can also be traversed by noting that Lyons: is missing elements contained in claim 51, does not enable all the elements of claim 51, provides insufficient detail regarding elements of claim 51 and that any alleged inherency of features of claim 51 has not been explained. Elements of claim 51 not explicitly or inherently described in the Lyons document include operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems and the Internet. Lyons also lacks detail regarding operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems and the Internet and any inherency of operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems and the Internet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 51 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 52 can be traversed by noting that Lyons: is missing elements contained in parent claim 44, does not enable all the elements of parent claim 44, provides insufficient detail regarding elements of parent claim 44 and that any alleged inherency of features of parent claim 44 has not been explained. The rejection of dependent claim 52 can also be traversed by noting that Lyons: is missing elements contained in claim 52, does not enable all the elements of claim 52, provides insufficient detail regarding elements of claim 52 and that any alleged inherency of features of claim 52 has not been explained. Elements of claim 52 not explicitly or inherently described in the Lyons document include a network model. Lyons also lacks detail regarding a network model and any inherency of a network model has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 52 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited reference is not even remotely similar to the invention described by claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and claim 52. As noted in MPEP 2112, anticipation requires that a substantial identity be established. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful

results is new, novel and non-obvious.

Another reason claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the prior art review for the instant application is apparently being completed under a different standard than that used for the review of similar patent applications - an apparent violation of 35 USC 3. As noted on page 46 in the evidence appendix and in the appeal brief for related application 10/282,113, the proper class for the invention described in these claims is class 707. The assignment to class 705 has resulted in considerable delay and the use of a different standard for prior art review than that used for similar applications properly classified in class 707.

Issue 2 - Whether claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The claims are patentable for several reasons. One of the primary reasons is that the Lyons document and the arguments related to the Lyons document fail to establish a prima facie case of anticipation in a number of ways for every rejected claim.

One way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. *MPEP 2131 notes that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).*

Another way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. *MPEP 2131 notes that anticipation requires that: "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

A third way in which the arguments related to the Lyons document fail to establish a prima facie case of anticipation for many if not all of the claims is there has been no disclosure of fact or technical reasoning that would support any allegations regarding inherent characteristics contained in the Lyons document. *MPEP 2112 notes that: "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)*

The Appellant respectfully submits that the rejection of independent claim 53 can be traversed in four ways. The first way is by noting that several elements of claim 53 are not explicitly described in the Lyons document. The elements not explicitly described include:

1. a common schema – the term is not mentioned,
2. storing data in files or tables – Lyons uses a central data store that stores data in accordance with a predetermined pattern relative to a given SEPT value (see page 37, Evidence Appendix, Lyons C2, L45 – 50) and does not mention storing data in files or tables, and
3. aggregating data from a plurality of database management systems – the Lyons disclosure does not mention “database management systems”.

The second way is by noting that Lyons lacks detail regarding a common schema, storing data in files or tables and aggregating enterprise related data from a plurality of database management systems. The third way is by noting that any inherency of a common schema, storing data in files or tables and/or aggregating enterprise related data from a plurality of database management systems has not been explained. A fourth way of traversing the claim rejection is to note that the storage of data in files or tables is not enabled by Lyons. Everest (a reference provided by the Examiner) teaches that databases that store data in files or tables use a finite number of logical data structures (see pages 40 - 48, Evidence Appendix). The Lyons database does not use any of these logical data structures (see page 37, Evidence Appendix, Lyons C2, L45 – 50); therefore, Lyons does not enable the storage of data in files or tables. The Appellant notes that there are still other ways in which the §102 rejection of claim 53 can be traversed. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 53 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 54 can be traversed by noting that Lyons: is missing elements contained in parent claim 53, does not enable all the elements of parent claim 53, provides insufficient detail regarding elements of parent claim 53 and that any alleged inherency of features of parent claim 53 has not been explained. The rejection of dependent claim 54 can also be traversed by noting that Lyons: is missing elements contained in claim 54, does not enable all the elements of claim 54, provides insufficient detail regarding elements of claim 54 and that any alleged inherency of features of claim 54 has not been explained. Elements of claim 54 not explicitly or inherently described in the Lyons document include a common data dictionary, categories of value, elements of value, and units of measure. Lyons also lacks detail regarding a common data dictionary, categories of value, elements of value, and units of measure and any inherency of a common data dictionary, categories of value, elements of value, and units of measure has not been explained. Lyons also fails to enable categories of value, elements of value and units of measure. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include the elements of value, categories of value and units of measure. Given these facts, it is clear that elements of value, categories of value and units of measure cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 54 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 55 can be traversed by noting that Lyons: is missing elements contained in parent claims 53 and 54, does not enable all the elements of parent claims 53 and 54, provides insufficient detail regarding elements of parent claims 53 and 54 and that any alleged inherency of features of parent claims 53 and 54 has not been explained. The rejection of dependent claim 55 can also be traversed by noting that Lyons: is missing elements contained in claim 55, does not enable all the elements of claim 55, provides insufficient detail regarding elements of claim 55 and that any alleged inherency of features of claim 55 has not been explained. Elements of claim 55 not explicitly or inherently described in the Lyons document include brands, customers, employees, production equipment, strategic partnerships, vendor relationships. Lyons also lacks detail regarding brands, customers, employees, production equipment, strategic partnerships, vendor relationships and any inherency of brands, customers, employees, production equipment, strategic partnerships, vendor relationships has not been explained. Lyons also fails to enable brands, customers, employees, strategic partnerships and vendor relationships. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include brands, customers, employees, strategic partnerships, and vendor relationships. Given these

facts, it is clear that brands, customers, employees, strategic partnerships, and vendor relationships cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 55 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 56 can be traversed by noting that Lyons: is missing elements contained in parent claim 53, does not enable all the elements of parent claim 53, provides insufficient detail regarding elements of parent claim 53 and that any alleged inherency of features of parent claim 53 has not been explained. The rejection of dependent claim 56 can also be traversed by noting that Lyons: is missing elements contained in claim 56, does not enable all the elements of claim 56, provides insufficient detail regarding elements of claim 56 and that any alleged inherency of features of claim 56 has not been explained. Elements of claim 56 not explicitly or inherently described in the Lyons document include forecast event data and historical event data. Lyons also lacks detail regarding forecast event data and historical event data and any inherency of forecast event data and historical event data has not been explained. Lyons also fails to enable forecast event data and historical event data. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include forecast event data and historical event data. Given these facts, it is clear that forecast event data and historical event data cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 56 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 57 can be traversed by noting that Lyons: is missing elements contained in parent claim 53, does not enable all the elements of parent claim 53, provides insufficient detail regarding elements of parent claim 53 and that any alleged inherency of features of parent claim 53 has not been explained. The rejection of dependent claim 57 can also be traversed by noting that Lyons: is missing elements contained in claim 57, does not enable all the elements of claim 57, provides insufficient detail regarding elements of claim 57 and that any alleged inherency of features of claim 57 has not been explained. Elements of claim 57 not explicitly or inherently described in the Lyons document include transaction data. Lyons also lacks detail regarding transaction data and any inherency of transaction data has not been explained. Lyons also fails to enable transaction data. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include transaction data. Given these facts, it is clear that transaction data cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 57 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 58 can be traversed by noting that Lyons: is missing elements contained in parent claim 53, does not enable all the elements of parent claim 53, provides insufficient detail regarding elements of parent claim 53 and that any alleged inherency of features of parent claim 53 has not been explained. The rejection of dependent claim 58 can also be traversed by noting that Lyons: is missing elements contained in claim 58, does not enable all the elements of claim 58, provides insufficient detail regarding elements of claim 58 and that any alleged inherency of features of claim 58 has not been explained. Elements of claim 58 not explicitly or inherently described in the Lyons document include operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems and the Internet. Lyons also lacks detail regarding operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems,

inventory systems, invoicing systems, payroll systems, purchasing systems and the Internet and any inherency of operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems and the Internet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 58 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 59 can be traversed by noting that Lyons: is missing elements contained in parent claim 53, does not enable all the elements of parent claim 53, provides insufficient detail regarding elements of parent claim 53 and that any alleged inherency of features of parent claim 53 has not been explained. The rejection of dependent claim 59 can also be traversed by noting that Lyons: is missing elements contained in claim 59, does not enable all the elements of claim 59, provides insufficient detail regarding elements of claim 59 and that any alleged inherency of features of claim 59 has not been explained. Elements of claim 59 not explicitly or inherently described in the Lyons document include a network model. Lyons also lacks detail regarding a network model and any inherency of a network model has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 59 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited reference is not even remotely similar to the invention described by claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Another reason claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59 are patentable is that the prior art review for the instant application is apparently being completed under a different standard than that used for the review of similar patent applications - an apparent violation of 35 USC 3. As noted on page 46 in the evidence appendix and in the appeal brief for related application 10/282,113, the proper class for the invention described in claims claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and claim 59 is class 707. The assignment to class 705 has resulted in the use of a different standard for prior art review than that used for similar applications properly classified in class 707.

Issue 3 - Whether claim 65 and claim 66 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The claims are patentable for several reasons. One of the primary reasons is that the Lyons document and the arguments related to the Lyons document fail to establish a prima facie case of anticipation in a number of ways for every rejected claim.

One way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. *MPEP 2131 notes that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).*

Another way in which the Lyons document fails to establish a prima facie case of anticipation for

many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. *MPEP 2131 notes that anticipation requires that: "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

A third way in which the arguments related to the Lyons document fail to establish a prima facie case of anticipation for many if not all of the claims is there has been no disclosure of fact or technical reasoning that would support any allegations regarding inherent characteristics contained in the Lyons document. *MPEP 2112 notes that: "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)*

The Appellant respectfully submits that the rejection of independent claim 65 can be traversed in four ways. The first way is by noting that several elements of claim 65 are not explicitly described in the Lyons document. The elements not explicitly described include:

1. a common schema – the term is not mentioned,
2. storing data in files or tables – Lyons uses a central data store that stores data in accordance with a predetermined pattern relative to a given SEPT value (see page 37, Evidence Appendix, Lyons C2, L45 – 50) and does not mention storing data in files or tables, and
3. aggregating event data from a plurality of database management systems – the Lyons disclosure does not mention “event data” or “database management systems”.

The second way is by noting that Lyons lacks detail regarding a common schema, storing data in files or tables and aggregating enterprise related event data from a plurality of database management systems. The third way is by noting that any inherency of a common schema, storing data in files or tables and/or aggregating enterprise related event data from a plurality of database management systems has not been explained. A fourth way of traversing the claim rejection is to note that the storage of data in files or tables is not enabled by Lyons. Everest (a reference provided by the Examiner) teaches that databases that store data in files or tables use a finite number of logical data structures (see pages 40 - 48, Evidence Appendix). The Lyons database does not use any of these logical data structures (see page 37, Evidence Appendix, Lyons C2, L45 – 50); therefore, Lyons does not enable the storage of data in files or tables or the use of a common database. The Appellant notes that there are still other ways in which the §102 rejection of claim 65 can be traversed. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 65 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 66 can be traversed by noting that Lyons: is missing elements contained in parent claim 65, does not enable all the elements of parent claim 65, provides insufficient detail regarding elements of parent claim 65 and that any alleged inherency of features of parent claim 65 has not been explained. The rejection of dependent claim 66 can also be traversed by noting that Lyons: is missing elements contained in claim 66, does not enable all the elements of claim 66, provides insufficient detail regarding elements of claim 66 and that any alleged inherency of features of claim 66 has not been explained. Elements of claim 66 not explicitly or inherently described in the Lyons document include a common data dictionary, a common set of attributes, categories of value, elements of value, and units of measure. Lyons also lacks detail regarding a common data dictionary, a common set of attributes, categories of value, elements of value, and units of measure and any

inherency of a common data dictionary, a common set of attributes, categories of value, elements of value, and units of measure has not been explained. Lyons also fails to enable categories of value, elements of value and units of measure. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include the elements of value, categories of value and units of measure. Given these facts, it is clear that elements of value, categories of value and units of measure cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 66 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited reference is not even remotely similar to the invention described by claim 65 and claim 66. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Another reason claim 65 and claim 66 are patentable is that the prior art review for the instant application is apparently being completed under a different standard than that used for the review of similar patent applications - an apparent violation of 35 USC 3. As noted on page 46 in the evidence appendix and in the appeal brief for related application 10/282,113, the proper class for the invention described in claim 65 and claim 66 is class 707. The assignment to class 705 has resulted in the use of a different standard for prior art review than that used for similar applications properly classified in class 707.

Issue 4 - Whether claim 67, claim 68, claim 69 and claim 70 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The claims are patentable for several reasons. One of the primary reasons is that the Lyons document and the arguments related to the Lyons document fail to establish a prima facie case of anticipation in a number of ways for every rejected claim.

One way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. *MPEP 2131 notes that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).*

Another way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. *MPEP 2131 notes that anticipation requires that: "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

A third way in which the arguments related to the Lyons document fail to establish a prima facie case of anticipation for many if not all of the claims is there has been no disclosure of fact or technical reasoning that would support any allegations regarding inherent characteristics contained in the Lyons document. *MPEP 2112 notes that: "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the*

determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

The Appellant respectfully submits that the rejection of independent claim 67 can be traversed in four ways. The first way is by noting that several elements of claim 67 are not explicitly described in the Lyons document. The elements not explicitly described include:

1. a common schema
2. obtaining a plurality of data source data dictionaries,
3. identifying a relationship between data source dictionaries and an application data dictionary, and
4. aggregating data from a plurality of database management systems selected from the group consisting of an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system and a purchasing system.

The second way is by noting that Lyons lacks detail regarding a common schema, obtaining a plurality of data source data dictionaries, identifying a relationship between data source dictionaries and an application data dictionary and aggregating enterprise related data from a plurality of database management systems selected from the group consisting of an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system and a purchasing system. The third way is by noting that any inherency of a common schema, obtaining a plurality of data source data dictionaries, identifying a relationship between data source dictionaries and an application data dictionary and aggregating enterprise related data from a plurality of database management systems selected from the group consisting of an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system has not been explained. A fourth way of traversing the claim rejection is to note that the storage of data in a common, application database is not enabled by Lyons. Everest (a reference provided by the Examiner) teaches that databases that store data in files or tables use a finite number of logical data structures (see pages 40 - 48, Evidence Appendix). The Lyons database does not use any of these logical data structures (see page 37, Evidence Appendix, Lyons C2, L45 – 50); therefore, Lyons does not enable the storage of data in files or tables in a database that would support application processing. The Appellant notes that there are still other ways in which the §102 rejection of claim 67 can be traversed. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 67 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 68 can be traversed by noting that Lyons: is missing elements contained in parent claim 67, does not enable all the elements of parent claim 67, provides insufficient detail regarding elements of parent claim 67 and that any alleged inherency of features of parent claim 67 has not been explained. The rejection of dependent claim 68 can also be traversed by noting that Lyons: is missing elements contained in claim 68, does not enable all the elements of claim 68, provides insufficient detail regarding elements of claim 68 and that any alleged inherency of features of claim 68 has not been explained. Elements of claim 68 not explicitly or inherently described in the Lyons document include forecast event data and historical event data. Lyons also lacks detail regarding forecast event data and historical event data and any inherency of forecast event data and historical event data has not been explained. Lyons also fails to enable forecast event data and historical event data. Lyons is limited to storing and manipulating information that appears in financial schedules

(see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include forecast event data and historical event data. Given these facts, it is clear that forecast event data and historical event data cannot be supported by Lyons. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 68 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 69 can be traversed by noting that Lyons: is missing elements contained in parent claim 67, does not enable all the elements of parent claim 67, provides insufficient detail regarding elements of parent claim 67 and that any alleged inherency of features of parent claim 67 has not been explained. The rejection of dependent claim 69 can also be traversed by noting that Lyons: is missing elements contained in claim 69, does not enable all the elements of claim 69, provides insufficient detail regarding elements of claim 69 and that any alleged inherency of features of claim 69 has not been explained. Elements of claim 69 not explicitly or inherently described in the Lyons document include a network model. Lyons also lacks detail regarding a network model and any inherency of a network model has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 69 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 70 can be traversed by noting that Lyons: is missing elements contained in parent claim 67, does not enable all the elements of parent claim 67, provides insufficient detail regarding elements of parent claim 67 and that any alleged inherency of features of parent claim 67 has not been explained. The rejection of dependent claim 70 can also be traversed by noting that Lyons: is missing elements contained in claim 70, does not enable all the elements of claim 70, provides insufficient detail regarding elements of claim 70 and that any alleged inherency of features of claim 70 has not been explained. Elements of claim 70 not explicitly or inherently described in the Lyons document include a common data dictionary, categories of value, elements of value, and units of measure. Lyons also lacks detail regarding a common data dictionary, categories of value, elements of value, and units of measure and any inherency of a common data dictionary, categories of value, elements of value, and units of measure has not been explained. Lyons also fails to enable categories of value, elements of value and units of measure. Lyons is limited to storing and manipulating information that appears in financial schedules (see page 37, Evidence Appendix, Lyons C2, L45 – 50). It is well known to those of average skill in the art that financial schedules do not include the elements of value, categories of value and units of measure. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 70 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited reference is not even remotely similar to the claimed invention. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Another reason claim 67, claim 68, claim 69 and claim 70 are patentable is that the prior art review for the instant application is apparently being completed under a different standard than that used for the review of similar patent applications - an apparent violation of 35 USC 3. As noted on page 46 in the evidence appendix and in the appeal brief for related application 10/282,113, the proper class for the invention described in claim 67, claim 68, claim 69 and claim 70 is class 707. The assignment to class 705 has resulted in the use of a different standard for prior art review than

that used for similar applications properly classified in class 707.

Issue 5 - Whether claim 71, claim 72, claim 73, claim 74, claim 75 and claim 76 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The claims are patentable for several reasons. One of the primary reasons is that the Lyons document and the arguments related to the Lyons document fail to establish a prima facie case of anticipation in a number of ways for every rejected claim.

One way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. *MPEP 2131 notes that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).*

Another way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. *MPEP 2131 notes that anticipation requires that: "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

A third way in which the arguments related to the Lyons document fail to establish a prima facie case of anticipation for many if not all of the claims is there has been no disclosure of fact or technical reasoning that would support any allegations regarding inherent characteristics contained in the Lyons document. *MPEP 2112 notes that: "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)*

The Appellant respectfully submits that the rejection of independent claim 71 can be traversed by noting that Lyons: is missing elements contained in claim 71, does not enable all the elements of claim 71, provides insufficient detail regarding elements of claim 71 and that any alleged inherency of features of claim 71 has not been explained. Elements of claim 71 not explicitly or inherently described in the Lyons document include:

1. a common schema
2. obtaining a plurality of data source data dictionaries,
3. identifying a relationship between data source dictionaries and an application data dictionary, and
4. aggregating data from a plurality of database management systems.

Lyons also lacks detail regarding a common schema, obtaining a plurality of data source data dictionaries, identifying a relationship between data source dictionaries and an application data dictionary and aggregating enterprise related data from a plurality of database management systems and any inherency of a common schema, obtaining a plurality of data source data dictionaries, identifying a relationship between data source dictionaries and an application data dictionary and aggregating enterprise related data from a plurality of database management systems has not been explained. Another way of traversing the claim rejection is to note that the storage of data in a common, application database is not enabled by Lyons. Everest (a reference provided by the Examiner) teaches that databases that store data in files or tables use a finite

number of logical data structures (see pages 40 - 48, Evidence Appendix). The Lyons database does not use any of these logical data structures (see page 37, Evidence Appendix, Lyons C2, L45 – 50); therefore, Lyons does not enable the storage of data in files or tables in a database that would support application processing. The Appellant notes that there are still other ways in which the §102 rejection of claim 71 can be traversed. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 71 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 72 and 73 can be traversed by noting that Lyons: is missing elements contained in parent claim 71, does not enable all the elements of parent claim 71, provides insufficient detail regarding elements of parent claim 71 and that any alleged inherency of features of parent claim 71 has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claims 72 and 73 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 74 can be traversed by noting that Lyons: is missing elements contained in parent claim 71, does not enable all the elements of parent claim 71, provides insufficient detail regarding elements of parent claim 71 and that any alleged inherency of features of parent claim 71 has not been explained. The rejection of dependent claim 74 can also be traversed by noting that Lyons: is missing elements contained in claim 74, does not enable all the elements of claim 74, provides insufficient detail regarding elements of claim 74 and that any alleged inherency of features of claim 74 has not been explained. Elements of claim 74 not explicitly or inherently described in the Lyons document include a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system and an intranet. Lyons also lacks detail regarding a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system and an intranet and any inherency of a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system and an intranet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 74 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 75 can be traversed by noting that Lyons: is missing elements contained in parent claim 71, does not enable all the elements of parent claim 71, provides insufficient detail regarding elements of parent claim 71 and that any alleged inherency of features of parent claim 71 has not been explained. The rejection of dependent claim 75 can also be traversed by noting that Lyons: is missing elements contained in claim 75, does not enable all the elements of claim 75, provides insufficient detail regarding elements of claim 75 and that any alleged inherency of features of claim 75 has not been explained. Elements of claim 75 not explicitly or inherently described in the Lyons document include a common data dictionary, categories of value, elements of value, and units of measure. Lyons also lacks detail regarding a common data dictionary, categories of value, elements of value, and units of measure and any inherency of a common data dictionary, categories of value, elements of value, and units of measure has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 75 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 76 can be traversed by noting that Lyons: is missing elements contained in parent claim 71, does not enable all the elements of parent claim 71, provides insufficient detail regarding elements of parent claim 71 and

that any alleged inherency of features of parent claim 71 has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 76 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited reference is not even remotely similar to the invention described in claim 71, claim 72, claim 73, claim 74, claim 75 and claim 76. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Another reason claim 71, claim 72, claim 73, claim 74, claim 75 and claim 76 are patentable is that the prior art review for the instant application is apparently being completed under a different standard than that used for the review of similar patent applications - an apparent violation of 35 USC 3. As noted on page 46 in the evidence appendix and in the appeal brief for related application 10/282,113, the proper class for the invention described in claim 71, claim 72, claim 73, claim 74, claim 75 and claim 76 is class 707. The assignment to class 705 has resulted in the use of a different standard for prior art review than that used for similar applications properly classified in class 707.

Issue 6 - Whether claim 77, claim 78, claim 79, claim 80 and claim 81 are patentable under 35 USC 102 over U.S. Patent 4,989,141 (hereinafter, Lyons)?

The claims are patentable for several reasons. One of the primary reasons is that the Lyons document and the arguments related to the Lyons document fail to establish a prima facie case of anticipation in a number of ways for every rejected claim.

One way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to describe every element of the rejected claims. *MPEP 2131 notes that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).*

Another way in which the Lyons document fails to establish a prima facie case of anticipation for many if not all of the rejected claims is that the Lyons document fails to provide the same level of detail that is present in the claim. *MPEP 2131 notes that anticipation requires that: "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

A third way in which the arguments related to the Lyons document fail to establish a prima facie case of anticipation for many if not all of the claims is there has been no disclosure of fact or technical reasoning that would support any allegations regarding inherent characteristics contained in the Lyons document. *MPEP 2112 notes that: "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)*

The Appellant respectfully submits that the rejection of independent claim 77 can be traversed

by noting that Lyons: is missing elements contained in claim 77, does not enable all the elements of claim 77, provides insufficient detail regarding elements of claim 77 and that any alleged inherency of features of claim 77 has not been explained. Elements of claim 77 not explicitly or inherently described in the Lyons document include:

1. a common schema,
2. a common network schema
3. obtaining a plurality of data source data dictionaries via a back end interface,
4. identifying a relationship between data source dictionaries and an application data dictionary, and
5. aggregating data from a plurality of database management systems for a plurality of transaction systems.

Lyons also lacks detail regarding a common schema, a common network schema, obtaining a plurality of data source data dictionaries via a back end interface, identifying a relationship between data source dictionaries and an application data dictionary and aggregating enterprise related data from a plurality of database management systems for a plurality of transaction systems and any inherency of a common schema, a common network schema, obtaining a plurality of data source data dictionaries via a back end interface, identifying a relationship between data source dictionaries and an application data dictionary and aggregating enterprise related data from a plurality of database management systems for a plurality of transaction systems has not been explained. Another way of traversing the claim rejection is to note that the storage of data in a common, application database is not enabled by Lyons. Everest (a reference provided by the Examiner) teaches that databases that store data in files or tables use a finite number of logical data structures (see pages 40 - 48, Evidence Appendix). The Lyons database does not use any of these logical data structures (see page 37, Evidence Appendix, Lyons C2, L45 – 50); therefore, Lyons does not enable the storage of data in files or tables in a database that would support application processing. The Appellant notes that there are still other ways in which the §102 rejection of claim 77 can be traversed. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 77 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 78 can be traversed by noting that Lyons: is missing elements contained in parent claim 77, does not enable all the elements of parent claim 77, provides insufficient detail regarding elements of parent claim 77 and that any alleged inherency of features of parent claim 77 has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 78 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 79 can be traversed by noting that Lyons: is missing elements contained in parent claim 77, does not enable all the elements of parent claim 77, provides insufficient detail regarding elements of parent claim 77 and that any alleged inherency of features of parent claim 77 has not been explained. The rejection of dependent claim 79 can also be traversed by noting that Lyons: is missing elements contained in claim 79, does not enable all the elements of claim 79, provides insufficient detail regarding elements of claim 79 and that any alleged inherency of features of claim 79 has not been explained. Elements of claim 79 not explicitly or inherently described in the Lyons document include accessing, converting, integrating and storing data from an Internet and any inherency of accessing, converting, integrating and storing data from an Internet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 79 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 80 can be traversed by noting that Lyons: is missing elements contained in parent claim 77, does not enable all the elements of parent claim 77, provides insufficient detail regarding elements of parent claim 77 and that any alleged inherency of features of parent claim 77 has not been explained. The rejection of dependent claim 80 can also be traversed by noting that Lyons: is missing elements contained in claim 80, does not enable all the elements of claim 80, provides insufficient detail regarding elements of claim 80 and that any alleged inherency of features of claim 80 has not been explained. Elements of claim 80 not explicitly or inherently described in the Lyons document include a common data dictionary, categories of value, elements of value, and units of measure. Lyons also lacks detail regarding a common data dictionary, categories of value, elements of value, and units of measure and any inherency of a common data dictionary, categories of value, elements of value, and units of measure has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 80 has not been established.

The Appellant respectfully submits that the rejection of dependent claim 81 can be traversed by noting that Lyons: is missing elements contained in parent claim 77, does not enable all the elements of parent claim 77, provides insufficient detail regarding elements of parent claim 77 and that any alleged inherency of features of parent claim 77 has not been explained. The rejection of dependent claim 81 can also be traversed by noting that Lyons: is missing elements contained in claim 81, does not enable all the elements of claim 81, provides insufficient detail regarding elements of claim 81 and that any alleged inherency of features of claim 81 has not been explained. Elements of claim 81 not explicitly or inherently described in the Lyons document include a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system and an intranet. Lyons also lacks detail regarding a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system and an intranet and any inherency of a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system and an intranet has not been explained. As a result of these deficiencies, a prima facie case that would support the anticipation rejection of claim 81 has not been established.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of anticipation for a single claim. The complete failure to identify anticipation at the claim level clearly illustrates the fact that the cited reference is not even remotely similar to the invention described in claim 77, claim 78, claim 79, claim 80 and claim 81. *As noted in MPEP 2112, anticipation requires that a substantial identity be established.* Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Another reason claim 77, claim 78, claim 79, claim 80 and claim 81 are patentable is that the prior art review for the instant application is apparently being completed under a different standard than that used for the review of similar patent applications - an apparent violation of 35 USC 3. As noted on page 46 in the evidence appendix and in the appeal brief for related application 10/282,113, the proper class for the invention described in claim 77, claim 78, claim 79, claim 80 and claim 81 is class 707. The assignment to class 705 has resulted in the use of a different standard for prior art review than that used for similar applications properly classified in class 707.

Conclusion

As detailed above, the evidence used to support the art rejections of the pending claims consists of a single document that fails to support an anticipation rejection for a single claim. The question as to whether an invention is anticipated by a prior art reference is a factual issue not a subjective one (In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). It is a fact that Lyons does not enable or anticipate a single claim of the claimed inventions. For this reasons and the reasons listed below, the Appellant respectfully but forcefully contends that each claim is patentable.

The Appellant notes that with respect to the prosecution of the instant application, it appears that the U.S.P.T.O. has not fully complied with the requirements set forth in the APA and 35 USC 3. Among other things, the Appellant specifically notes that:

a) At least some of the claims appear to be misclassified under class 705;

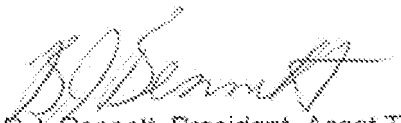
b) There appears to have been numerous instances of non-compliance with MPEP 904.03;

c) The prosecution of the instant application has been substantially delayed for a variety of reasons. At least part of the delay appears to have occurred because the Examiner refused to respond to reasonable requests for a copy of a missing office action; and

d) The prior art review for the instant application appears to have been completed under a different standard than that used for the review and allowance of other, similar applications.

Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,



B.J. Bennett, President, Asset Trust, Inc.
Dated: June 1, 2007

CLAIMS APPENDIX

44. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for performing a data method, the method steps comprising: aggregating enterprise related data from a plurality of database management systems in accordance with a common schema and storing said aggregated data in one or more tables or files to support processing.

45. The program storage device of claim 44 wherein the enterprise related data are aggregated in accordance with a common data dictionary that identifies a common set of attributes selected from the group consisting of: category of value, component of value, element of value, currency, unit of measure and combinations thereof.

46. The program storage device of claim 45, wherein the components of value are selected from the group consisting of revenue, expense, change in capital and combinations thereof.

47. The program storage device of claim 45, wherein the elements of value are selected from the group consisting of brands, customers, employees, production equipment, strategic partnerships, vendor relationships and combinations thereof.

48. The program storage device of claim 45, wherein at least part of enterprise-related data is entered for each point of time over a sequential series of points in time preceding a specified valuation date.

49. The program storage device of claim 48, wherein the enterprise related data further comprise forecast event data and historical event data.

50. The program storage device of claim 49, wherein the enterprise related data further comprises transaction data.

51. The program storage device of claim 44 wherein said plurality of database management systems are obtained from the group consisting of advanced financial systems, basic financial systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory

systems, invoicing systems, payroll systems, purchasing systems, the Internet and combinations thereof.

52. The program storage device of claim 44, wherein the common schema further comprises a network model.

53. A computer-implemented method, comprising:
aggregating enterprise related data from a plurality of database management systems in accordance with a common schema and storing said aggregated data in one or more tables or files to support processing for enterprise analysis and modeling.

54. The method of claim 53, wherein the enterprise related data are aggregated in accordance with a common data dictionary that identifies a common set of attributes selected from the group consisting of category of value, component of value, element of value, currency, unit of measure and combinations thereof.

55. The method of claim 54, wherein one or more elements of value are selected from the group consisting of brands, customers, employees, production equipment, strategic partnerships, vendor relationships and combinations thereof.

56. The method of claim 53, wherein enterprise related data further comprises forecast event data and historical event data.

57. The method of claim 53, wherein the enterprise related data further comprises transaction data.

58. The method of claim 53, wherein said plurality of database management systems are obtained from the group consisting of advanced financial systems, basic financial systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, the Internet and combinations thereof.

59. The method of claim 53, wherein the common schema further comprises a network model.

65. A computer-implemented method, comprising:

automatically aggregating enterprise related event data from a plurality of database management systems into files or tables in a common database, thereby converting the data into a format that supports a common schema for analyzing and modeling an enterprise.

66. The method of claim 65, the method further comprising:

using a common data dictionary to identify a common set of attributes in the enterprise related data from the plurality of database management systems, the attributes including at least one of: component of value, currency, element of value, unit of measure, or a combination thereof;

automatically aggregating the enterprise related data from the plurality of database management systems using the identified common set of attributes.

67. A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform an enterprise data integration method, comprising:

obtaining a plurality of data dictionaries and data from a plurality of data sources via a network connection,

identifying one or more relationships between each data source data dictionary and an application database data dictionary,

converting said data source data to a common schema by using said relationships in an application software segment, and

storing said converted data in an application database for use in processing

where a plurality of data sources further comprise a plurality of database management systems for applications selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system and combinations thereof.

68. The computer readable medium of claim 67, wherein a common schema is defined by an application database schema.

69. The computer readable medium of claim 67, wherein a common schema further comprises a network schema.

70. The computer readable medium of claim 67, wherein a common schema contains a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

71. A data integration system, comprising:

a computer with a processor having circuitry to execute instructions;

a storage device available to said processor with sequences of instructions stored therein, an interface coupled to a plurality of data sources each of which has a data dictionary, and an application software segment which when executed causes the processor to:

obtain a plurality of data dictionaries and data from the plurality of data sources,

identify one or more relationships between each data source data dictionary and an application database data dictionary,

convert said data source data to a common schema by using said relationships, and

store said converted data in an application database for use in processing.

72. The system of claim 71, wherein a plurality of data sources further comprise a plurality of relational databases that use different data formats.

73. The system of claim 71, wherein an interface further comprises a network connection.

74. The system of claim 71, wherein a plurality of data sources further comprise database management systems for applications selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system, an intranet and combinations thereof.

75. The system of claim 71, wherein a common schema contains a common data dictionary that defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

76. The system of claim 71, wherein a conversion of data to a common schema further comprises

an conversion of data that is completed automatically.

77. A computer implemented data integration method, comprising:

accessing a plurality of enterprise data and data dictionaries via a back-end interface coupled to a plurality of data sources,

identifying one or more relationships between each data source data dictionary and an application database data dictionary,

converting said enterprise data to a common schema by using said relationships in an application software segment, and

storing said converted data in an application database for use in processing,

where a common schema further comprises a network schema, and

where a plurality of data sources further comprise database management systems for a plurality of enterprise transaction systems.

78. The method of claim 77, wherein a back-end interface further comprises a network connection.

79. The method of claim 77, wherein the method further comprises accessing, converting, integrating and storing data from an Internet.

80. The method of claim 77, wherein a common schema further comprises a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

81. The method of claim 77, wherein a plurality of enterprise transaction systems are selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system, an Intranet and combinations thereof.

Evidence Appendix

Pages 36 - 39	excerpt from Lyons document first cited October 20, 2006
Pages 40 - 48	excerpt from Everest document entered October 12, 2006
Page 49 - 52	4 pages returned to file wrapper on April 8, 2006
Page 53 - 54	2 page petition response dated August 27, 2004

United States Patent [19]

Lyons et al.

[11] **Patent Number: 4,989,141**

[45] **Date of Patent: Jan. 29, 1991**

[54] **COMPUTER SYSTEM FOR FINANCIAL ANALYSES AND REPORTING**

[75] Inventors: **Richard J. Lyons**, West Hempstead; **Kevin F. Nolan**, Middle Village, both of N.Y.; **Wah C. Chu**, Fairfield, Conn.

[73] Assignee: **Corporate Class Software**, Stamford, Conn.

[21] Appl. No.: **55,823**

[22] Filed: **Jun. 1, 1987**

[51] **Int. Cl.**[5] **G06F 15/30**

[52] **U.S. Cl.** **364/408**

[58] **Field of Search** 364/408

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,321,672 3/1982 Braun 364/408

OTHER PUBLICATIONS

"Using Spreadsheets to Monitor Your Portfolio", Thomas A. Meyers, PC Magazine, Apr. 15, 1986.

Dow Jones Software, product brochure, Spreadsheet Analysis.

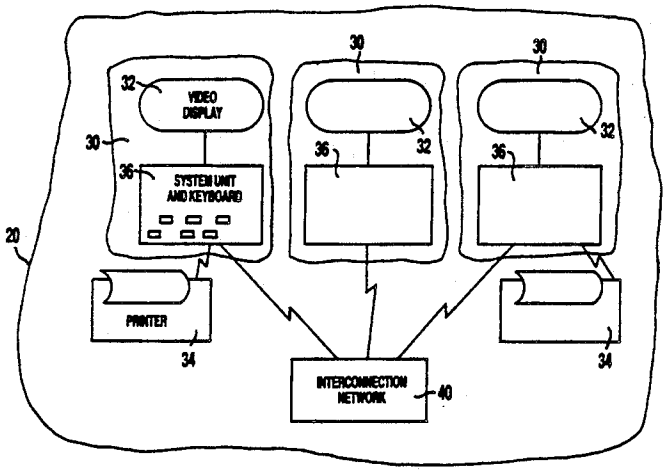
Teddi Converse, *Reflex In Business*, pp. 204–217, 1985.

Primary Examiner—Allen MacDonald
Assistant Examiner—Gail Hayes
Attorney, Agent, or Firm—Pennie & Edmonds

[57] **ABSTRACT**

An advanced financial reporting and analysis software package is described. The package collects, organizes, manages and consolidates financial data and provides user defined capabilities for creating financial and corporate reports. Financial data is organized into four business classifications or dimensions: Schedule, Entity, Period and Type. Data is stored in the system in such a way that all data associated with a particular Schedule, Entity, Period and Type is identified by that particular SEPT value. To accommodate automatic data entry, a mapping means or template is provided that specifies for each different input spreadsheet the location of the first data cell in the spreadsheet and the size of the spreadsheet. Data is read from the data store by various report and spreadsheet generating functions which convert data associated with particular SEPT values to desired output formats.

10 Claims, 29 Drawing Sheets



COMPUTER SYSTEM

COMPUTER SYSTEM FOR FINANCIAL ANALYSES AND REPORTING

BACKGROUND OF THE INVENTION

This relates generally to computer systems and more particularly to a computer software method and apparatus for advanced financial applications such as general ledger, inventory, accounts payable, accounts receivable, financial and management reporting, and financial analysis and consolidation.

Corporate software systems generally are divided into two categories. The first, basic financial systems, includes general ledger, accounts receivable and accounts payable systems. These systems include computer worksheets and data bases. The second, advanced financial systems and processes, uses information from the basic financial systems to perform financial analysis and reporting functions.

At present many of the basic financial systems-applications reside on micro computer software packages.

Worksheet applications allow the user to keep a two dimensional chart of his financial data on an electronic worksheet. Illustrative of such spread sheet applications is Lotus Development Corporation's LOTUS 1-2-3 ®. That program allows the user to set up two dimensional worksheets in the form of a grid made up of horizontal rows and vertical columns. Each intersection of a row or column forms a cell in which data can be stored in the form of numeric data (such as an account balance), text (such as an account name), or arithmetic operators (such as a formula which manipulates the contents of other cells). To enter data into a worksheet, the user will usually enter data via a keyboard, cell by cell. When users employ LOTUS 1-2-3 ® to perform more detailed analyses it is likely that they have also created complicated strings of commands (i.e., macros) to facilitate data entry, management and reporting capabilities. Since these macros have been created by specific individuals, they can be difficult to revise should business dictate. More important, because these macros are tailored to a user's personal needs, the application's usefulness across the corporation is limited.

These spreadsheet programs are also limited by their presentation of data in only two dimensions. This often requires considerable reorganization of the data before it can be used in advanced financial systems.

Database packages such as Ashton Tate's dBASE III ® allow the user to keep a financial data base. Frequently, this information is needed for use in a report having a format different from that in which it is stored or in a spreadsheet such as that generated by one of the computer spreadsheets. However, report generation can be tedious and a great deal of data manipulation must be performed in order to load data from a data base into an electronic worksheet. For example, to load data from a data base to an electronic spreadsheet, the user must convert the data into an ASCII file and subsequently download it into an electronic worksheet. When data is downloaded into a worksheet each field must be inserted into a cell. The downloading of data into the worksheet must be done with extreme care, otherwise cells containing formulas may be overwritten.

In addition to the above limitations, personal computer programs also generally lack the capacity to implement complex information management and finance controls such as audit trails and password protection capabilities needed in high-level financial applications.

These programs also have the limitations that they are typing intensive with the result that the user must either acquire reasonable typing skills in order to use such programs efficiently or he must suffer considerable time penalties as he attempts to cope with extensive keyboard input.

SUMMARY OF THE INVENTION

The present invention is an advanced financial reporting and analysis software package. The package collects, organizes, manages and consolidates financial data and provides user defined capabilities for creating financial and corporate reports.

Data can be loaded into the computer system manually as well as from known micro-computer packages such as LOTUS 1-2-3 ® and Ashton-Tate's dBase ® and also from departmental and corporate data bases and basic financial systems such as general ledger, accounts payable and inventory applications. The software package can also incorporate data from outside sources, such as Dow Jones News/Retrieval service to permit analysis of competitive financial data.

Data is output from the financial data base of the present invention either into reports or directly into electronic worksheets. The data can be displayed in various ways allowing the user to use the system as an analysis tool as well as a production reporting system. The process of loading data base information into an electronic worksheet is far simpler than the method which must be employed when working with two separate conventional packages.

In accordance with the invention, financial data is organized into four business classifications or dimensions: Schedule, Entity, Period and Type. Schedule identifies the kind of document the data comes from (e.g., an income statement, a tax schedule). Entity identifies the reporting group within the business organization (e.g., departments, divisions, subsidiaries). Period identifies the range of time that the data represents (e.g., FY 87, Q2 87). Type provides an additional dimension that can be used to further categorize the data (e.g., actual, budget, forecast).

Data is stored in the system in such a way that all data associated with a particular Schedule, Entity, Period and Type (SEPT) is identified by that particular SEPT value and is stored in a predetermined pattern relative to the location of that SEPT value in the data store.

To accommodate automatic data entry, a mapping means or template is provided that specifies for each different input spreadsheet the location of the first data cell in the spreadsheet and the size of the spreadsheet. From this information, the system is able to locate the data in the spreadsheet and read it systematically into the data store.

Data is read from the data store by various report and spreadsheet generating functions which convert data associated with particular SEPT values to desired output formats. For example, one such function might map data associated with the same Schedule, Entity and Type but consectuive Periods over several years onto a spreadsheet having as many columns as there are Periods so as to produce a spreadsheet showing the variation of such data over time.

One function of the present invention is to consolidate information that arrives at corporation's headquar-

ters in multiple formats from the corporation's numerous divisions and subsidiaries. Through usercontrolled dictionaries within its user interface, the computer application standardizes the way financial information is managed and analyzed within a corporation. In addition, the system allows for hierarchical mapping so that subsidiaries are attached to the controlling entities. Therefore, when data is input into the data base so as to update an entry, all entities which are attached to the updated entity are also updated.

Other features of the invention include a modeling function which is integrated with the data store so that data associated with any SEPT value can be recalled for use in calculating the model or for comparison with the model.

In addition to financial and management reporting and analysis, other application areas include international planning and analysis, consolidation and tax analysis and the like. Reporting functions include currency conversion, journal entries, hierarchy roll-ups and computation of year to date totals and variances. Additional features include audit trails and data verification.

The present invention may be used as a stand alone system, but is preferably for departmental use. The financial computer system and process is designed for use by all levels of employees who are involved in financial control, whether it be a firm's chief financial officer or an end user in the financial department.

The financial system of the present invention is presently sold commercially by the assignee as the FASTAR TM financial computer program. Further details of the operation of the system are set forth in the FASTAR TM Tutorial, Reference Guide, Quick Reference, Modeling Guide, and Modeling Quick Reference available from the assignee, which are incorporated here by reference.

BRIEF DESCRIPTION OF DRAWINGS

These and other objects, features and advantages of the invention will be more readily apparent from the following description of a preferred embodiment of the invention in which:

FIG. **1** is a system overview of an illustrative computer system used in the practice of the invention;

FIG. **2** is a flow chart depicting the user's interaction with the system;

FIGS **3A–6B** are flowcharts depicting the implementation of the Create function of the present invention;

FIGS. **7–18** are flowcharts depicting the implementation of the Input function of the present invention;

FIGS. **19–23** are flowcharts depicting the implementation of the Query function of the present invention; and

FIGS. **24–26** are flowcharts depicting the implementation of the Pop-up function of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

As shown in FIG. **1**, the preferred embodiment of the invention is a computer system **20** illustratively comprising a plurality of personal computers **30** and an interconnection network **40**. The system can be networked to twenty-five users or more. Resident in the memory of one of the computers **30** and accessible to all of them is the data base management program of the present invention which provides for advanced query and analysis functions.

The personal computers illustratively are IBM-PC's or clones or any of the more advanced personal computers now available. As is well known such computers include a processor, a read/write memory and means for writing data into said memory and reading data from said memory. Typical memory configurations used with the present invention should include at least 640 Kilobytes of semiconductor random access memory and at least a 10 megabyte hard disk. Each such computer includes a video display **32**, a printer **34**, and a keyboard **36** that provides for alphanumeric input, function keys and a cursor control. Data can be input from the keyboard or from computer files such as electronic worksheets. Data can be output to printed reports and to electronic worksheets.

Unlike conventional data base management systems or worksheet applications, the system of the present invention allows for a four dimensional analysis of all financial data. In particular, the data stored in the system is organized into four business classifications or dimensions, namely Schedule, Entity, Period and Type (SEPT). Schedule identifies the type of document the data comes from (e.g., income statements, budgets, tax schedules) Entity identifies a reporting group within the organization (e.g., departments, subsidiaries). Period identifies the time that the data represents (e.g., FY 87, Q2 87). Type provides an additional dimension that allows the user to further categorize data (e.g., actual, budgeted, forecast).

In storage, all the data associated with a particular Schedule, Entity, Period and Type is identified by that particular SEPT value. Thus, the system data base can be represented as follows:

$$S_1, E_1, P_1, T_1, \text{datacell}_1, \ldots \text{datacell}_x$$

$$S_k, E_l, P_m, T_n, \text{datacell}_1, \ldots \text{datacell}_y$$

where the number of SEPT values can be as great as the product of the numbers of Schedules, Entities, Periods and Types (i.e., k*1*m*n) and the number of data cells associated with each SEPT value can vary.

In addition to the data base, the system of the present invention also provides a means of mapping input data from its source to the location in the database assigned to the particular SEPT value with which it is associated and means for mapping data from the database location assigned to the SEPT values to an output format. The input mapping means is referred to below as an input template. Several output mapping means are described below for the generation of output reports or files.

When retrieving data from the system, the user can specify data from different categories in each of the dimensions. For example, the user may have defined a data base with the following SEPT entries:

SCHEDULES	ENTITIES	PERIODS	TYPES
Income statement	Corporate	Q1 87	Actual
Balance Sheet	U.S.	Q2 87	Budgeted
Sales Budget	Far East	Q3 87	Forecast
Tax Schedule	Europe	Q4 87	Q4 Var

The user could then retrieve data on the basis of any combination of the categories found in each of the four dimensions. For example, the user could request:

Schedule=Sales Budget

Entity=U.S., Far East

Set-Up

Before the data base management system can operate, it needs an "outline" of the user's financial organization. For example, it must know which subsidiaries send data, the currencies these subsidiaries use and the currency conversion rules. This information is supplied by six dictionaries. The data base management system also needs to know the relationship or hierarchical organization of the entities that constitute the financial organization.

Other features of the present invention include automatic data entry from input files or worksheets into the system's data base and checking for integrity errors. To accommodate this automatic data entry, a mapping means or template must be created that specifies for each different input worksheet, the location of the first data cell in the worksheet and the size of the worksheet. From this information, the system is able to locate the data in the worksheet and read it systematically into the data store.

These and other set-up procedures are accomplished by selection of the CREATE function on the screen depicted in Table I. As shown in Table II, the CREATE function has six subfunctions: INPUT_TEMPLATE, HIERARCHY, DICTIONARY, RANGE, X-INTEGRITY and SETUP and each of these subfunctions has available to it a menu of sub-subfunctions such as ADD, MODIFY, DELETE, LIST.

TABLE II

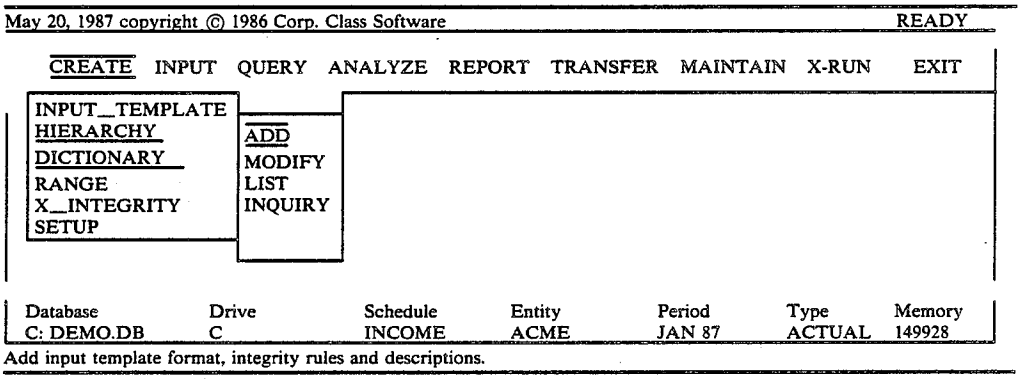


Table II illustrates the addition of entries in the DICTIONARY subfunction. The CREATE, DICTIONARY and ADD functions are all highlighted as shown by a line above and below each of these functions.

The INPUT_TEMPLATE function allows the user to build templates which are used as structured gateways for inputting data. All data passes through one of these templates before being stored in the data base.

The HIERARCHY function allows the user to define the structure of the corporation for financial analysis. A hierarchy entity is the entity into which a specified group of other entities, called detailed entities, can be consolidated. The HIERARCHY function defines the order in which data can be automatically rolled-up from detailed entities to hierarchial entities.

The dictionaries are defined by the DICTIONARY function. There are six dictionaries for Period, Type, Entity, Currency Rate Code, Currency Rate Type and Account Description. These dictionaries are the first thing to be defined in setting up a system; and since the other dictionary entries are all defined relative to a specific period, the first dictionary entry to be defined is a Period. The other dictionary values are then defined for that period as well. For each additional period that is defined in the period dictionary, the remaining dictionary values must again be defined. Since these values are often the same over many different periods, this can usually be done simply by allowing the system to copy such values over for each additional period.

The RANGE function permits the user to define the categories into which the data is organized in the system by providing a pointer between a name and a datacell associated with a particular SEPT value. By assigning the same name to several data cells each associated with a different SEPT value, the user can extract data from each of these data cells by using the one name rather than by specifying the location of each of the data cells.

X_INTEGRITY permits the user to set up the cross-integrity checks. For example, the data in the Income Statement can be compared against data in the Balance Sheet to see if they are equal. If the data is incorrect the system will prompt the user with an error. A status/error report listing integrity errors is also available at this point. This is part of the audit trail which is provided by the system.

The set-up functions (create and INPUT) allow the user to do certain administrative tasks such as create user passwords, enter data into system dictionaries, set default periods and types, and specify printer configurations.

The dictionaries form the basic structure of the system's data bases. Each function of the system refers to these dictionaries in order to validate data while processing. For example, if the user desires to input data for the first quarter of 1987 he must first enter this period in the Period Dictionary as Q1 87.

The preferred embodiment of the present invention uses six defined dictionaries. The following five dictionaries are required:

Period—To specify time periods such as Quarter, Year, Month and Day. The data base management system's operation is based on time periods which are specified by the user to conform to the user's unique reporting needs. All data is input for a specific period and all other dictionary entries are defined for that period.

Type—To specify the types of data being reported and analyzed. Common types are Actual, Standard Budget, and Forecast but the user may use and type any name he wishes.

Currency Rate Codes—To specify the currencies in which the user does business, such as dollar, peso, or yen.

DATABASE MANAGEMENT

Objectives, System Functions, and Administration

Gordon C. Everest

Graduate School of Management
University of Minnesota

McGraw-Hill Book Company

New York St. Louis San Francisco Auckland Bogotá Hamburg
Johannesburg London Madrid Mexico Montreal New Delhi
Panama Paris São Paulo Singapore Sydney Tokyo Toronto

CREDITS: Page 7: ANSI definitions, copyright © 1977 Computer and Business Equipment Manufacturers Association (CBEMA). Permission granted November 5, 1985; Pages 7 and 47: Definitions of "data" and "integrity" reprinted by permission of Simon and Schuster, Inc., © 1980 by Simon and Schuster, Inc.; Pages 10 and 11: Quotations from Hanold and DeWan reprinted with permission of *DATAMATION®* magazine, © 1972 by Technical Publishing Company, a Dun & Bradstreet Company, all rights reserved; Page 17: Figure 1-11, reprinted with permission of The Diebold Group, Inc.; Page 178: Figure 5-9, portion of MARK IV® File Definition Form reprinted by permission of Informatics General Corporation; Page 288: Figure 7-7, © 1971 Program Products, Inc., author unknown; Page 386: Figure 11-1, *Computerworld*, September 12, 1977, author unknown; Page 528: Figure 14-9, reprinted with permission of Dr. Larry G. Kersta; Page 559: *Time* magazine excerpts, copyright © 1978, 1982, 1984 Time Inc. All rights reserved. Reprinted by permission from TIME; Pages 625, 642, 643, 654, 681 and 764: Six cartoons by Jim Orton, reprinted with permission; Page 655: Figure 16-7, advertisement reprinted with permission of Aetna; Page 759: Figure 18-9, advertisement as it appeared in 1981, reprinted with permission of Britton-Lee; Page 772: Figure 18-12, reprinted with permission from Pergamon Press Ltd.

This book was set in Times Roman by York Graphic Services, Inc.
The editor was Christina Mediate;
the cover was designed by Joan E. O'Connor;
the production supervisor was Marietta Breitwieser.
Project supervision was done by York Production Services, Inc.
R. R. Donnelley & Sons Company was printer and binder.

DATABASE MANAGEMENT
Objectives, System Functions, and Administration

1 2 3 4 5 6 7 8 9 0 D O C D O C 8 9 8 7 6 5

ISBN 0-07-019781-4

Library of Congress Cataloging in Publication Data

Everest, Gordon C.
Database management.

(McGraw-Hill series in management information systems)
Includes bibliographies and index.
1. Data base management. 2. Management information systems. I. Title. II. Title: Data base management. III. Series.
QA76.9.D3E93 1986 001.64'4 85-11404
ISBN 0-07-019781-4

The previous chapter established a classification of DBMSs based upon functions broadly grouped by user type. This chapter examines and classifies DBMSs based upon the class of data structures which can be defined in and processed by the DBMS. The next chapter classifies DBMSs based upon their user interface and language.

In any evaluation of DBMS it is necessary to consider *both* the types of data structures definable in the system *and* the languages or methods provided for processing those structures. A very rich data structuring capability is useless without comprehensive, high-level languages and facilities for processing and manipulating the data. Conversely, the design of a data language depends partly upon the data structure—a more complex data structure class with several different data constructs requires more operations to be expressed in the language.

4.1 A TAXONOMY OF DATA STRUCTURES

In current DBMS literature, systems are most often classified according to the logical structure of the underlying data "model,"* that is, the class of data structures which can be defined in and processed by a given DBMS. A database is formally defined to a DBMS by writing statements in its Data Definition Language (DDL).

The following paragraphs introduce the taxonomy of data structures by naming and briefly describing various types of structures. At this point the reader should visualize the taxonomy as presented in Figure 4-1. This brief overview provides an initial understanding by placing the pieces of the taxonomy into a consistent, overall picture. Subsequent sections further describe each part of the taxonomy, thus providing a deeper understanding.

Let's start† with the proposition that a database is a collection of information about *entities* (people, organizations, positions, policies, orders, parts, projects, events, etc.). *Attributes* describe entities (e.g., age of person, budget of organization). A particular entity ("instance") is described by the *values* of a set of attributes. (Age of "John Doe" is 41). The database designer selects some set of attributes to describe entities in the database.

The first division in the taxonomy of data structures is based upon whether or not the attributes or data items are grouped into records. (Records represent entities). Historically, most data structures have been record-based. Most people in data processing are familiar with collections of data consisting of files of records. Assuming a grouping of data items at the outset of database design leads to some difficulties in the resulting structures, particularly when they expand to encompass more of the data in an organization. Recognizing these limitations, several authors [notably Abrial (1974); Senko (1976), Nijssen (1976 and 1977), and Kent (1979)] have proposed a class of

*The term "model" is widely used although it is somewhat misleading: The phrase "data structure class" is more accurate. Something is a "model" if it bears a likeness to or is an imitation of something else. A defined database is a data model of reality to the users; a DBMS is a data modeling system.

†This is not the only place to start a discussion of data structures. For another see: Tsichritzis and Lochovsky, 1982.

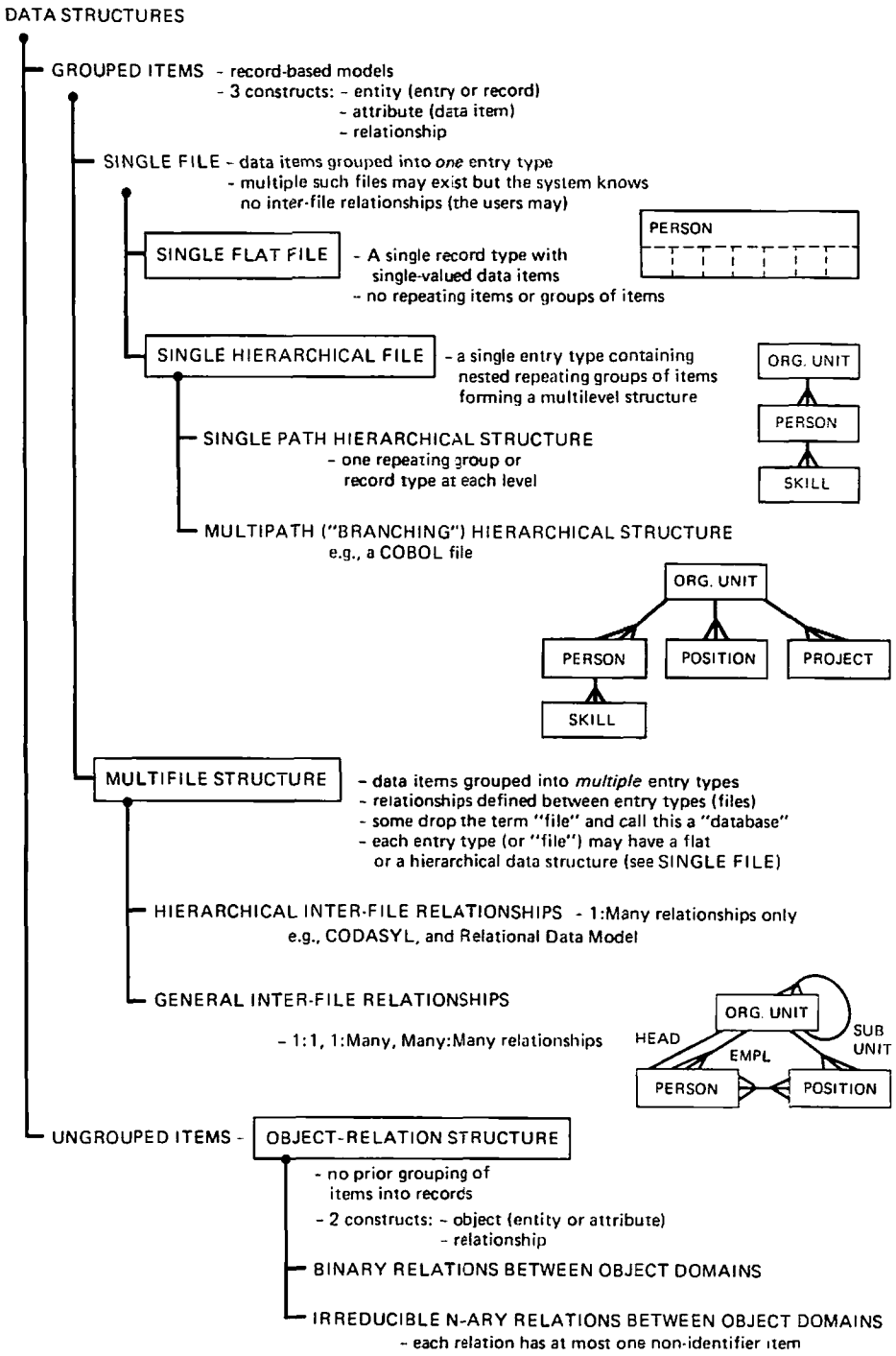


Figure 4-1. A Taxonomy of Data Structures.

data structures which omit the dual notion of entity-attribute, replacing it with the single notion of "object." These are called the **object-relation** class of data structures, explained at the end of this chapter.

Data structures with grouped items can first be divided into single-file structures and multifile structures. In a **single-file structure**, all information in the database can be grouped according to a single entry type. In other words, there is one primary entity connotation for the entire database. Single-file structures are further divided into flat file structures and hierarchical file structures. In a **single hierarchical file structure**, each primary entity may have subentities (that is, the primary record, corresponding to the primary entity, contains nested repeating groups of data items representing attributes of the subentities). Single hierarchical structures are further divided into single path and multipath ("branching") hierarchical file structures or data structures.

A **multifile data structure** consists of multiple, related files. All the data items in the database are grouped into multiple record types. There is no longer one primary entity or record type in the database. Entities may exist independently of each other and may be related to each other. Multifile data structures offer greater flexibility than single-file structures, therefore, enabling greater fidelity in modeling the world of interest to the user(s).

Multifile data structures are further divided into those which only permit a hierarchical relationship between entity types and those which permit a general relationship between entity types. (Multifile data structures are also further divided depending on whether each file must be flat or may be a hierarchical structure.)

4.1.1 Only What the System Knows

In all cases, what can be formally defined in a DDL to a DBMS determines the data structure class. The data structure class is based upon what the *system* knows about the data structure. Generally, the users will know more, *much more*, than the system knows about the meaning of a particular data structure.

4.1.2 The Three "Great" Data Structures

It has become popular to classify DBMSs into three groups based upon the underlying data structure class [Date, 1981: Ulman, 1980]. The understanding of each type is based upon a particular system or proposal:

Hierarchical	IMS from IBM, or SYSTEM 2000 from Intel.
Network	CODASYL DBTG Proposal now embodied in a DDL and DML.
Relational	based on the work of E. F. Codd, now embodied in SQL from IBM.

Language is associated with these examples of each data structure class. It is a common mistake to evaluate the data structure by the language available for processing that structure. Comparing the low-level languages of IMS and the CODASYL DML to

15.5 DATABASE ADMINISTRATOR TOOL: THE DATA DICTIONARY

Several computer-based tools have emerged to satisfy various functions of database administration. These include tools for:

DATABASE INTEGRITY MAINTENANCE

- Backup and recover (dump and load) data.
- Check the stored data to ensure that it conforms to its definition and satisfies defined validation criteria.
- Analyze monitoring and audit trail logs for evidence of any suspicious activity or problem trends.
- Trace all chains in the stored data to ensure that all pointers are valid and that all stored pieces are connected.

DATABASE REVISION

- Redefine a stored database.
- Restructure the database to conform to the new definition.

PERFORMANCE MONITORING AND IMPROVEMENT

- Analyze monitoring logs for changing trends in database usage.
- Determine storage space utilization and recover space left by logically (but not physically) deleted data.
- Reorganize stored data by folding in data from overflow areas and physically reordering stored records.
- Reorganize file search and access mechanisms; rebalance indexes.

DATABASE DESIGN

- Check a proposed design for consistency.
- Generate a graphical data structure diagram from a proposed definition.
- Provide estimates of file size and performance.

Most of these tools require information about the database. From a broader perspective, the database administrator, users, and the DBMS all require information about the database. Ideally, such information should be stored in one central place. This is the role of the data dictionary, or dictionary/directory. A data dictionary is the main tool of database administration.

A *dictionary* provides definitions of things.
A *directory* tells you where to find them.
A *data dictionary/directory* contains information (or data) about data.

More recently, data dictionaries have been extended to provide information on other entities as they relate to data—programs, external input transactions and output re-

ports, userschemas, and users. The phrase *information system resource dictionary* has been used to reflect this broader perspective. Allen, Loomis, and Mannino [1982] simply dropped the limiting designation of "data" and used the phrase "integrated dictionary/directory." Furthermore, the term "catalogue" is sometimes used to better reflect the broader perspective than is implied by the traditional notion of a dictionary. Nevertheless, the term *data dictionary* still persists and is used here to encompass an information system resource catalogue.

The information system resource catalogue, or simply "data dictionary," is a DBA tool for an organization to maintain information relating to the various resources used in information systems—data, input transactions, output reports, programs, application systems, and users. The information about nondata entities is maintained primarily as they relate to the data entities.

Historically, data dictionary systems evolved to satisfy the need for *more complete* information about data stored in a database than was provided by the database schema. Some early DBMSs provided a very sketchy definition of a database—sufficient for machine access and processing but not sufficient for the people who had to use and manage the data [see Cahill, 1970; Uhrowczik, 1973]. There was (and is) also a need to provide a repository of data about data to support the systems analysis and design process, *before* formally defining the data to a DBMS (or in application programs).

15.5.1 Providing a More Complete Definition of Data

When the database definition is formalized in the database definition language (DDL) of a DBMS, it contains sufficient information to enable machine processing. For the people in the using environment, the DDL statements and graphical representation usually contain *in*sufficient information. The DDL only needs to be complete enough for the *machine* to be able to store data and subsequently retrieve it. Many DDLs contain substantially less information than was discussed in Chapter 6. They only give the tip of the iceberg of "data about data."

Nevertheless, the more complete the formal database definition, the less the need for a data dictionary to "complete" the definition of the data within the system. A data dictionary supplements a database definition; it is like a "super" database definition. Conversely, the database definition is (or should be) a subset of the information in the data dictionary. That is, all the information required for the formal database definition should be derivable from the information in the data dictionary.

This is the critical element of the data dictionary/directory system proposed by Plagman and Altshuler [1972]. They argue that an integrated corporate database system be driven by one central definition for both people and processes, including the DBMS. When a system contains both a stored database definition and a mechanized data dictionary which are separate and largely independent, there is no assurance that the definitional information in the two will be consistent. The database definition informational needs of the DBMS should be derived from the data dictionary/directory. This reduces the dependence on the currently installed DBMS.

The following points indicate the kinds of information that could be stored in a

data dictionary. The list goes substantially beyond the database definition information discussed in Chapter 6 to include information needed for database administration. Although the primary focus is on data about data items (or data "elements"), some information pertains to other structural elements.

- Name—short name, full name, and name aliases or synonyms as used in the DBMS or in programs (e.g., names in COBOL). May include long forms of the name perhaps developed from some hierarchical classification scheme or highly structured naming scheme (see following section for an outline of one such scheme called the 'OF-language').
- Description or explanation; meaning, interpretation rules and guidelines; purpose of the data item and why it is kept.
- Owner—delegated responsibility for creation, maintenance, and integrity of the data item values.
- Date of creation and date of last update of this dictionary entry.
- Value set designation by type, ranges or enumeration of values, the meaning of attribute values and codes, and values for the null states of unknown and irrelevant.
- Internal format and size.
- External display format, and default column heading on reports.
- Unit of measurement.
- Derivation rule or algorithm, if applicable.
- Validation criteria and editing rules.
- Subjective expression of reliability or validity of the data.
- Conditions for existence or relevance; mandatory or optional.
- Frequency of generation and change; useful life.
- Where the data is stored and how to get it; based on relationships.
- Relationship to other data in the database—from a common domain of values.
- Relationship to other entities in the system—computer installations, application systems, programs, files (record types), external data collection forms and input transactions, output reports, userschemas.
- How the data is used (created, added, read, modified, deleted) by related process entities (programs).

Providing a more complete database definition, the data dictionary serves several purposes. It is used by the DBA to support design activities and control responsibilities. It can be used by consumers (users) of data to find out what data is available, what the data means, and where and how to get it.

15.5.2 Uses of a Data Dictionary

A comprehensive data dictionary provides the definition of data items, how they fit into a data structure, and how they relate to other entities in the information system environment. The types of entities can be classified as follows:

- Data—data item, record type (group, segment), database.
- Processes—computer installation, application system, program, module.
- External inputs and outputs—transaction, form, report, display screen, userschema.

- Users—individual, group, organizational unit, terminal—any of which may be the source or user (destination) of data, or the point of responsibility for the creation and maintenance of data.

The foundation of the data dictionary is information about data items. With a comprehensive base of information, the data dictionary can serve several useful purposes. These purposes span the whole spectrum of planning, determining information requirements, design and implementation, operation, and revision.

- Documentation—providing reports of data about data. The data dictionary can be used to generate a graphical representation of the database structure similar to automatic program flowcharting.
- Data availability—a data map for end users to discover what data exists in the organization, what it means, where it is stored, and how to access it. May be provided using a facility for browsing through a data dictionary.
- Design—a tool to support the processes of database design and systems analysis and design. A data dictionary can contain the latest proposed contents of a database as a design evolves.
- Schema generation—automatic generation of the DDL for a target DBMS to serve as the vehicle for implementing a database.
- Change control—setting and enforcing standards; evaluating the impact of proposed changes and implementing those changes.

In a general sense, the data dictionary is a vehicle for managing size and complexity in a database environment. In a typical, single-function organization (not a mixed conglomerate) the individual data items will number in the several thousand. The data items appear in hundreds of files (record types) which are interrelated, and in hundreds of input transactions or data capture screens and output reports. In fact, these numbers tend to be relatively independent of organization size; at least they are not linearly proportional to organization size.

15.5.3 For Systems Analysis and Design

For purposes of systems analysis and design, the data dictionary results from taking inventory of all the data in an organization (or a particular application system). This inventory of existing data can be refined, and it can be extended with new data requirements.

In building a data dictionary, the primary focus is a description of *existing* data, that is, the collection of data about *all* existing data within an organization whether mechanized or not. The process of collecting data about data is a necessary step in the analysis of an existing system to discover:

- Data flows, sources, and destinations.
- Redundant data within the system.
- Multiple descriptions of the same data and similar descriptions for different data.
- Something about the tasks which create, process, use, move, and store data.

The methodology of inventorying data usually revolves around the groupings of data on input forms, in manual and mechanized files, and on output reports, all of

Phone calls were made. Attorney was unable to be contacted

OR/699 ✓445

528 pm East

9/6/01

[redacted]

SEARCHED

Class	Sub.	Date	Exmr.
705	1, 7	11/11/03	KP
709	10 100-194		

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

SEARCH NOTES

	Date	Exmr.

Staple Issue Slip Here

POSITION		ID NO.	DATE
CLASSIFIER		JE	9/8/98
EXAMINER			
TYPIST		7141	9/10/98
VERIFIER			
CORPS CORR.			
SPEC. HAND			
FILE MAINT.			
DRAFTING			

INDEX OF CLAIMS

Claim Final	Claim Original	Date 11/14/00							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
	5	✓							
	6	✓							
	7	✓							
	8	✓							
	9	✓							
	10	✓							
	11	✓							
	12	✓							
	13	✓							
	14	✓							
	15	✓							
	16	✓							
	17	✓							
	18	✓							
	19	✓							
	20	✓							
	21	✓							
	22	✓							
	23	✓							
	24	✓							
	25	✓							
	26	✓							
	27	✓							
	28	✓							
	29	✓							
	30	✓							
	31	✓							
	32	✓							
	33	✓							
	34	✓							
	35	✓							
	36	✓							
	37	✓							
	38	✓							
	39	✓							
	40	✓							
	41	✓							
	42	✓							
	43	✓							
	44								
	45								
	46								
	47								
	48								
	49								
	50								

SYMBOLS

✓	Rejected
=	Allowed
. (Through numeral)	Canceled
+	Restricted
N	Non-elected
I	Interference
A	Appeal
O	Objected

Claim Final	Claim Original	Date							
	51								
	52								
	53								
	54								
	55								
	56								
	57								
	58								
	59								
	60								
	61								
	62								
	63								
	64								
	65								
	66								
	67								
	68								
	69								
	70								
	71								
	72								
	73								
	74								
	75								
	76								
	77								
	78								
	79								
	80								
	81								
	82								
	83								
	84								
	85								
	86								
	87								
	88								
	89								
	90								
	91								
	92								
	93								
	94								
	95								
	96								
	97								
	98								
	99								
	100								

6705 U.S. PTO
08/999245
12/10/97

PATENT APPLICATION

APPROVED FOR LICENSE ☐

INITIALS _____

08999245

CONTENTS

Date Entered or Counted			Date Received or Mailed
	1.	Application _____ papers.	
	2.	The figure 1-15 drawings	9/17/98
	3.	~~Petition~~ Request Letter	~~9/4/98~~ 9/5/98
	4.	Missing Parts complete	11/4/98
	5.	Ltr & re-submitted Drawings	July 12, 1999
	6.	Rec. P/Atty	9/27/99
	7.	Copies P/Atty	9/29/99
	8.	Power To Inspect	9/29/99
7-31	9.	Restriction	8-01-00
	10.	Response to Restriction	9-5-00 9-1-00 cjm
11-20	11.	Rej (3 mos)	11-21-00
	12.	Relocation	3/16/07
	13.	Notice Sabandoned	12/7/07
	14.	Letter Re Notice of Abandonment	12-14-07
	15.		
	16.		
	17.		
	18.		
	19.		
	20.		
	21.		
	22.		
	23.		
	24.		
	25.		
	26.		
	27.		
	28.		
	29.		
	30.		
	31.		
	32.		

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED

AUG 27 2004

DIRECTOR'S OFFICE
TECHNOLOGY CENTER 3600

Jeffrey S. Eder
19108 30th Drive SE
Mill Creek, WA 98012

In re Application of :
Jeffrey S. Eder :
Application No. 08/999,245 :
Filed: December 10, 1997 :
For: A METHOD OF AND A SYSTEM FOR DEFINING AND VALUING ELEMENTS OF A BUSINESS ENTERPRISE

DECISION ON PETITION TO WITHDRAW THE HOLDING OF ABANDONMENT

This is in response to applicant's letter of December 14, 2001 requesting a copy of the Office action mailed on November 21,2000. This letter is being construed as a petition to withdraw the holding of abandonment under 37 CFR 1.181. The delay is considering this petition is sincerely regretted.

The petition is **GRANTED**.

A review of the file record indicates that this application was held abandoned on December 7, 2001 for failure to respond to the Office action within the statutory period of three months from the mailing date of November 21, 2000.

Applicant submits that the Office action was never received.

A review of the file reveals that a Revocation and Substitute Power of Attorney was filed September 5, 2000 and was entered into the file wrapper. However, it appears the papers were never processed and entered into the USPTO database. Thus, the Office action was not mailed to the new attorney of record, Todd M. Becker of Davis, Wright, Tremaine, LLP at the firm's address of 2600 Century Square, 1501 Fourth Avenue, Seattle, Washington 98101-1688. Subsequently, applicant filed another Revocation of Power of Attorney on March 16, 2001 that revoked all previous powers and returned power to applicant. This document was processed and a Notice to that effect was mailed on March 22, 2001, but the Office action of November 21, 2000 had been previously sent to the incorrect address and was never provided to applicant.

The application is being forwarded to the Supervisory Legal Instruments Examiner with instructions to withdraw the holding of abandonment and restore the application to pending status before re-dating and re-mailing the Office action to the updated correspondence address.

Randolph A. Reese
Special Programs Examiner
Technology Center 3600
(703) 308-2121

RAR: 8/25/04

Related Proceedings Appendix

None